

C-130 AVIONICS MODERNIZATION PROGRAM (AMP)



Air Force ACAT ID Program

Total Number of Systems:	519
Total Program Cost (TY\$):	\$4.9B
Full-rate production:	FY06

Prime Contractor

N/A

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2020

The purpose of the C-130 Avionics Modernization Program (AMP) is to lower the cost of ownership of the U.S. military's C-130 fleet, including Special Operations Forces (SOF) and other special mission variants, while complying with the Air Force Navigation and Safety (Nav/Safety) Master Plan, Required Navigation Performance (RNP) requirements, and other applicable Global Air Traffic Management (GATM) requirements. This will be done through a comprehensive cockpit modernization of the C-130 fleet by replacing aging, unreliable equipment and adding additional equipment necessary to meet Nav/Safety and GATM requirements. Replacement/addition of equipment is intended to lower the overall cost of ownership of the entire C-130 fleet by reducing cockpit crew manning while simultaneously increasing aircraft reliability, maintainability, and sustainability. The AMP should reduce the number of different aircraft configurations and provide an improved precision airdrop capability for the combat delivery fleet. Additional equipment needed to meet Night Vision Imaging System (NVIS) requirements and improve the C-130's precision approach and landing capability will also be installed. This program also provides the interfaces necessary to integrate real time information in the cockpit.

This modification supports the CINCs' theater airlift requirements to provide air movement and delivery of personnel and equipment directly into objective areas through airland, airdrop, or other delivery techniques. It encompasses the air logistic support of all theater forces, including those engaged

in combat operations, to meet specific theater objectives. In addition to combat delivery aircraft, the AMP is designed to support special mission requirements performed by U.S. Air Force C-130 variants, such as the AC-130H/U, EC-130E/H, HC-130N/P, LC-130H, and MC-130E/H/P. Sister Service variants such as the U.S. Navy C-130s, KC-130s, LC-130s, and TC-130s; U.S. Marine Corps KC-130s; and U.S. Coast Guard HC-130s could also benefit from these modifications.

The C-130 AMP supports the *Joint Vision 2020* operational concepts of *dominant maneuver* and *focused logistics*.

BACKGROUND INFORMATION

The AMP Requests For Proposal was released earlier this year. Four proposals were submitted, and they are currently being evaluated in source selection. The C-130 AMP Milestone II decision is scheduled for February 2001.

The C-130 AMP Development System Manager, ASC/GRM, is responsible for accomplishment of all tasks to develop, integrate, test, field and support modifications to Air Mobility Command (AMC), Air Combat Command (ACC), and AFSOC C-130 aircraft. A C-130 AMP/Common Avionics Architecture for Penetration (CAAP) Test Planning Working Group has been established to provide a forum for all cognizant test organizations to participate in the C-130 AMP/CAAP test planning process. The Responsible Test Organization (RTO) for AMP/CAAP Developmental Test & Evaluation is the 418th Flight Test Squadron at Edwards AFB, CA. The using commands and AFOTEC will provide crew members, as required, to support ground and flight tests during combined DT/OT and dedicated OT&E. The RTO is responsible for conduct of DT&E testing, detailed test planning, and reporting of test results to the Program Managers. Participating Test Organizations include but are not limited to the 339th Flight Test Squadron (FLTS) at Robins AFB, GA, and Det 1 of the 46 Operations Group at Hurlburt Field, FL. ASC/GRM will manage the LFT&E program.

OT&E will be conducted by AFOTEC, with support from the program office and the using commands. DT&E and OT&E test objectives and sorties will be combined to the maximum extent possible. Force Development Evaluations may be conducted by the Air Mobility Command's, 33rd FLTS and by the Air Force Special Operations Command's 18th FLTS beginning in FY03.

TEST & EVALUATION ACTIVITY

DOT&E has participated in the IPTs that review preparations for the Milestone II decision. Test Planning Working Groups have been held to clarify important details of the TEMP, and a LFT&E IPT has been created to formulate the specifics of the LFT&E program.

The AMP test strategy presumes that contractor ground tests will be conducted at the modification facility yet to be determined. Following a series of shakedown flights at the contractor facility, the aircraft will transition to the RTO facility at Edwards AFB for the start of formal DT&E. DT&E flight tests will be accomplished by a combined government and contractor Integrated Test Team under the direction of the RTO. AFOTEC personnel will participate as part of the government contingent.

TEST & EVALUATION ASSESSMENT

The successful integration of AMP components across a broad range of aircraft configurations and mission requirements will be a significant challenge. The concept is feasible, however, it is unlikely to succeed unless the various users commit to a unified fleet management approach for the modification of all aircraft. Fleet management of more than 700 aircraft is one of the keys to success. A tentative plan calls for some aircraft being retired, others being moved from one unit to another to manage structural life, some sent to depot, and still others used for test purposes. Identifying aircraft by tail number, without regard to unit ownership, is efficient, but it is not popular. Unity of purpose and strong leadership by all affected commands will be vital over an extended period of time.

The following lists the different Mission Design Series (MDS) of the C-130's to be modified and some of the special test requirements for them:

Quantities of C-130 and Special Test Requirements by MDS

MDS	Nomenclature	Special Tests
C130E/H/H1/H2/H3	Combat Delivery	GATM, TCAS, TAWS, NVIS, FMS
AC-130H/U	Gunship	Gunfire Accuracy, ESA, Defensive
EC-130E	ABCCC	Mission Unique
EC-130H	Compass Call	Mission Unique
HC-130N/P	Combat Rescue	Mission Unique
MC-130E	Combat Talon I	TF/TA Navigation
MC-130H	Combat Talon II	TF/TA Navigation, ESA, Defensive
MC-130P	Combat Shadow	Mission Unique
LC-130H	Ski	Mission Unique

The request for proposal to execute this program allows the winning contractor to determine how each MDS will be modified to meet requirements. This allows for the possibility of different configurations for each MDS. The potential gains in fleet commonality may not be realized and the impacts on training, interoperability, and logistics could lower combat effectiveness. However, a standard cockpit layout is planned allowing crewmembers to be trained to fly in one MDS and only required to undergo mission qualification when reaching their new units—unlike the current situation.

